Reporting Template for
Tracking and Calculating Credits for the 2006 Model Year
Under the Nonroad ABT Program

I. Background

A major component of the final rule for nonroad diesel engines is the averaging, banking and trading (ABT) program for NO_x, NMHC + NO_x, and PM (40 CFR §89.203 through §89.212). Manufacturers must track the implementation of these provisions based on the model year, engine family, and the NO_x, NMHC + NO_x, or PM level to which the engine family is certified. In order to help streamline and standardize the process by which manufacturers submit information related to credits or deficits under the ABT program, EPA has created an Excel-based template to assist manufacturers with the organization, presentation, and submittal of their data for the 2006 reporting year.

II. Reporting Template

The Excel file contains six worksheets: "Current MY Credit Calc," "Current MY Credit Calc-MANUAL," "Field Descriptions," "Credit Transfers," "Summary - NMHC + NO_x," and "Summary - PM."

- **Current MY Credit Calc:** This worksheet contains 19 fields, which apply to all of the information required to track credit balances for the nonroad averaging sets. The first 12 columns are the fields that require data entry or input from the manufacturer. The next five columns (highlighted in yellow) are preset or calculated values based on the data entered and cannot be modified manually. There are two additional columns to the right of these five columns. One of these columns (Messages) indicates whether the data entered are inconsistent with the program requirements or limitations and the other (Comments) allows for the entry of any additional comments or notes that may apply to the data or credit calculation associated with the engine family. This worksheet only applies to calculations for the 2006 model year. There are filters for each column that can be used by clicking on the column header or the arrow within the column header.

- **Current MY Credit Calc-MANUAL:** This worksheet contains the same fields and format as the Current MY Credit Calc worksheet, but does not incorporate any automatic calculations or preset values. This worksheet should be used only when there are unique circumstances (e.g., split engine families) that the automatic calculations in the Current MY Credit Calc worksheet are unable to process accurately. In this worksheet, with the exception of the 'Messages' column, all 19 columns allow for data entry or input from the user as well as the totals in the summary section below the data entry cells. The totals entered in this worksheet will be automatically reflected in the corresponding Summary sheet totals for both NMHC+NO_x and PM. Note that as with the Current MY Credit Calc worksheet,

filters may be used within each column by clicking on the header.

- **Field Descriptions:** This worksheet contains detailed notes on each of the 19 fields in the first two worksheets, including a description of the required data or information, how the data should be entered, the existence of any drop-down menus, and any other information that would be relevant to that field (including whether the field is a calculated value based on preceding entries in the spreadsheet).

- **Credit Transfers:** This worksheet summarizes any credit transfers that have occurred between manufacturers. The use of this worksheet will not be necessary in cases where the manufacturer has not transferred any credits to a separate entity.

- **Summary - NMHC + NO_x:** This worksheet provides an overall summary of the nonroad NMHC + NO_x credits that have been calculated from the first worksheet or entered into the second worksheet and allows the manufacturer to enter in credits from previous model years so that banked credits can be properly applied and compared to current model year credits. Note that there are limitations on the application of previously banked Tier 1 NO_x credits. These credits may not be applied to or averaged with credits or deficits associated with the Tier 3 standards. This worksheet allows the manufacturer to outline how credits will be used to document compliance with the NMHC + NO_x standards. The section for Tier 3 allows the user to apply existing Tier 2 credits to the Tier 3 balance.

- **PM Summary:** This worksheet provides an overall summary of the nonroad PM credits that have been calculated from the first worksheet or entered into the second worksheet and allows the manufacturer to enter in credits from previous model years so that banked credits can be properly applied and compared to current model year credits. This worksheet allows the manufacturer to outline how credits will be used to document compliance with the PM standards. Note that since there are no averaging restrictions between PM Tier 1 and 2 (and since the PM standards for Tier 2 are consistent with those for Tier 3), the PM Summary worksheet combines the credit balances into one total for each averaging set.

III. Entering Data for the Current Model Year

Before entering data, it is important to ensure that the Excel file is set up to automatically calculate the data. To ensure that the data are calculated immediately upon entry, go to the Tools menu and select Options. In the window that appears, select the Calculations tab. In this tab, the option "Automatic" should be selected. Also, note that the drag and drop option should not be used to copy or move data entered in the worksheet since doing so will change how the cells are referenced in the formulas and may lead to erroneous calculations. In order to prevent this from occurring inadvertently, go to the Tools menu and select Options. In the window that appears, select the "Edit" tab and

remove the check mark from the "Allow cell drag and drop" box.

International users should ensure that the settings for number handling are consistent with the template. If your system is currently set up to use a comma for the decimal separator and a period for the thousands separator, you must temporarily modify the settings for number handling to avoid errors within the automatic calculations. To modify these settings, go to the Tools menu and select Options. In the window that appears, select the International tab. Within this tab, remove the check mark within the 'Use system separators' box within the section at the top entitled 'Number handling'. At this point, you may insert a period as the decimal separator and a comma as the thousands separator.

Please note the distinction between the drop-down menus and the filters. Several fields have drop-down menus within the data entry cells. These menus provide a specific set of choices and using this list, you may select the applicable option for each line item entry. The arrow for the drop-down menu is displayed within each cell. Filters are also available and allow you to view a specific subset of data (e.g., Tier 2 entries only). The filters can be used by clicking on the header or the arrow within the header. Note that when you filter on specific criteria, the credit totals displayed below the data entry cells will not be affected. As a result, these totals will reflect data entered regardless of whether it is displayed or hidden due to the use of the filter function.

These worksheets are protected and as a result, you may navigate around the unlocked (i.e., data entry) cells using the arrow keys on your keyboard. However, to view the entire spreadsheet including the calculated cells and the credit totals below the data entry rows, you should navigate using the scroll bars at the bottom and right side of the worksheet. Using the scroll bars will allow you to view cells that cannot be selected.

Step 1: Using the third worksheet ("Field Descriptions") as a guide, enter in the appropriate information for each data element in the first 12 columns of the "Current MY Credit Calc" worksheet. The next five columns in this worksheet (highlighted in yellow) are calculated or preset values based on the information and data entered in the first 12 columns. If special circumstances require additional flexibility for the credit calculations (e.g., split engine families), enter in relevant data for all fields within the "Current MY Credit Calc - MANUAL" worksheet as well as the resulting credit totals in the summary box located below the data entry fields (the totals entered will be automatically reflected in the appropriate Summary worksheet).

Each engine family (or portion of each engine family) that is subject to a specific standard or averaging set, should have its own separate line item entry. Ensure that the Tier, Average Power Rating, Averaging Set, and FEL are compatible for each entry. Within both the automatic and manual worksheets, a note will appear in the 'Message' column if any data are inconsistent with program requirements or limitations. For example, if Tier 1

and NO_x are selected, but the Average Power Rating is at or below 560 kW, a note will appear in the "Message" column that highlights the incompatibility of the averaging set and power rating.

Based on the information you enter, the "Current MY Credit Calc" worksheet will calculate the corresponding credit balances for the engine family. Below the data entry rows, the current model year credit totals are summarized based on the Tier, averaging set, and parameter. Note that the Tier 1 NO_x standards are divided into those associated with an FEL above 8.0 g/kW-hr and those at or below this level. If any of these credits are banked or traded, those above this threshold will be subject to an adjustment factor of 0.65 (unless subsequently applied to another Tier 1 engine family). Credits associated with engines with indirect fuel injection that are rated at or above 19 kW are also calculated separately since they may not be traded to other manufacturers (see 40 CFR 89.206(b)(4)). The credit totals for engine families certified to the Tier 3 standards for NMHC + NO_x are maintained as separate totals in this worksheet since Tier 1 credits may not be applied to Tier 3 credit balances. The Tier 3 standards and credit balances only apply to the >19 kW averaging sets.

Note that any extra rows that do not contain any data, can be left blank. If additional rows are needed, please contact EPA for a revised form and specify how many entries/rows will be required.

Step 2: If any transfer of credits/deficits have occurred with another manufacturer, enter all relevant information into the fields listed in the "Credit Transfer" worksheet.

IV. Summary of NO_x and NMHC + NO_x Credits

The "Summary - NMHC + NO_x" worksheet contains a summary of all NO_x and NMHC + NO_x credits and deficits (both banked and current year) and allows for the application of these credits to current model year balances. The initial step requires the entry of carryover or traded credit and deficit balances. The application and averaging of these existing credits with current model year credits is summarized in the second step below. In this worksheet, any cells that are highlighted with a color will be automatically populated based on information in the "Current MY Credit Calc", "Current MY Credit Calc - MANUAL" or "Credit Transfers" worksheets or from other data in this worksheet. Any cell that is gray indicates that data entry is not applicable or required.

Step 1: **Credit Balances Before Averaging:** Enter any carryover credit balances from prior years. Note that current model year credits and credits acquired or sold through trading activity are automatically populated in this summary sheet based on data entered and calculated within the "Current MY Credit

Calc", "Current MY Credit Calc - MANUAL" or "Credit Transfers" worksheets, respectively.

Step 2: **Tier 1 and 2 Credit Usage and Averaging:** Using the existing balances for Tiers 1 and 2 (as included in the "Credit Balances before Averaging" section), indicate the number of traded, banked, or current model year credits that should be applied to the current model year credit balances for either Tier 1 or Tier 2. Each line item in this section specifies the type of credits being used as well as the Tier to which the these credits will be applied. Ensure that credits are applied within the corresponding averaging set. Since indirect fuel injection credits for engines at or above 19 kW cannot be traded, the credit balances for these engines are maintained separately for both banked and current MY credits.

Step 3: **Tier 3 Credit Usage and Averaging:** Using existing carryover or current model year credits for Tier 2 (as included in the "Credit Balances before Averaging" section), indicate the number of credits that should be applied to the current model year credit balance for Tier 3. As with the preceding step, ensure that credits are applied within the corresponding averaging set and maintain separate balances for indirect fuel injection.

The "Summary of Credit Balances after Averaging" section of the worksheet is automatically populated with the credit balances based on the application of NO_x and NMHC + NO_x credits in the preceding sections. The final credit totals include traded, banked, and current MY credit balances and are shown for NO_x and NMHC + NO_x. Credits in the marine diesel averaging sets may be used to cover a shortfall in the corresponding non-marine averaging set (see 40 CFR 89.204(c)(3) and (4)). If applicable, enter the marine credits to be transferred in the final credit balances section for non-marine averaging sets. Note that credit balances for indirect fuel injection are not available for trading. As a result, the total banked credit balances within each of the averaging sets for engines at or above 19 kW, will be the sum of the total credits and the corresponding balance for indirect fuel injection engines.

V. Summary of PM Credits

The "PM Summary" worksheet contains a summary of all PM credits (both banked and current year) and allows for the application of these credits to current model year balances. The initial step requires the entry of carryover or traded PM credit balances. The application and averaging of these existing PM credits with current model year PM credits is summarized in the second step. As with other worksheets, any cells that are highlighted yellow or orange will be automatically populated based on information in the "Current MY Credit Calc", "Current MY Credit Calc - MANUAL" or "Credit Transfers" worksheets or from other data in this worksheet. Any cell that is gray indicates that data entry is not applicable or required.

Step 1: **Credit Balances Before Averaging:** Enter any carryover credit balances from prior years in the appropriate averaging set.

Step 2: **Credit Usage and Averaging:** Using existing carryover or current model year credits (as included in the "Credit Balances before Averaging" section), indicate the number of credits that should be applied/averaged to the current model year credit balance. Ensure that credits are applied within the corresponding averaging set and maintain separate balances for indirect fuel injection.

The "Summary of Credit Balances" section of the worksheet is automatically populated with the credit balances based on the application of PM credits in the preceding rows. The final credit totals include traded, banked and current MY credit balances and are combined into the overall PM averaging sets. The program elements that apply to PM regarding the transfer of marine credits and the limitations on trading associated with indirect fuel injection credits are consistent with those for NMHC + NO_x. Marine diesel credits can be transferred within the final credit balances section to a corresponding non-marine averaging set, if desired. Since PM credit balances for indirect fuel injection are not available for trading, they are maintained as a separate total and the total banked credit balances within the averaging sets for engines at or above 19 kW, will be the sum of the total credits and the corresponding balance for indirect fuel injection engines.